In Focus

Spotlight on the June 11 issue

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Brain reserve and cognitive reserve in multiple sclerosis: What you've got and how you use it

Sixty-two patients with multiple sclerosis received MRIs to estimate brain reserve, estimated with intracranial volume and disease burden. The authors provided evidence of cognitive reserve independently protecting against disease-related cognitive decline over and above brain reserve. Lifestyle choices protect against cognitive impairment independently of genetic factors outside of one's control.

See p. 2186

Aquaporin-4 antibody-negative neuromyelitis optica: Distinct assay sensitivity-dependent entity

This comparative analysis of aquaporin-4 antibody assays on 87 neuromyelitis optica (NMO) samples showed that improvement of assay sensitivity was associated with increased differences between seronegative and seropositive patients: male sex, Caucasian ethnicity, simultaneous optic neuritis and transverse myelitis at onset, and better visual outcome. This suggests a distinct pathophysiology in seronegative NMO.

See p. 2194

From editorialists Fujihara & Leite: "Unlike pathogenic AQP4-antibody-positive sera, IgG purified from AQP4-antibody-negative sera did not induce NMO-like pathology in experimental studies, but this finding requires confirmation."

See p. 2176

Spinal cord tract diffusion tensor imaging reveals disability substrate in demyelinating disease

This study assessed tissue integrity using diffusion tensor imaging in 37 patients with remote cervical cord disease to determine the relationships among specific clinical functions. Diffusion tensor imaging can serve as a biomarker of tract-level spinal cord injury, with consistent concordance with clinical outcomes.

See p. 2201

Aquaporin-4 antibody-positive cases beyond current diagnostic criteria for NMO spectrum disorders

Using a highly sensitive assay in 298 patients, 13 aquaporin-4 antibody-positive patients were identified who did not meet the current NMO spectrum diagnostic criteria. They had more limited phenotypes than previously described. It is critical to diagnose patients who may fall within the

broadened NMO spectrum correctly, since treatments for clinically isolated syndrome/multiple sclerosis may worsen NMO.

See p. 2210

Placebo-controlled trial of rituximab in IgM anti-myelin-associated glycoprotein neuropathy

This study assessed the effect of 4 weekly infusions of 375 mg/m² rituximab in 26 patients with IgM anti-myelin-associated glycoprotein antibody demyelinating neuropathy, with 28 patients receiving placebo. There was no evidence to support the use of rituximab on primary outcome measures, but improvement was found in secondary measures.

See p. 2217

Autoimmune limbic encephalopathy and anti-Hu antibodies in children without cancer

The authors identified 6 children with anti-Hu antibodies and limbic encephalitis without associated cancer. Oligoclonal bands in the CSF suggested an immune disease. Despite immunomodulatory treatments, 5 of the children developed cognitive impairments.

Future studies are needed to determine the incidence of this syndrome and whether earlier diagnosis and T-cell-directed immunotherapies may improve its prognosis.

See p. 2226

Is increased blinking a form of blepharospasm?

The authors tested 16 patients with an increased blink rate but without orbicularis oculi spasms, 24 patients with involuntary orbicularis oculi spasms, and 18 controls. Despite similar somatosensory temporal discrimination threshold abnormalities, different R2 recovery cycles in persons with primary blepharospasm and those with increased blink rate alone suggest that these disorders have different pathologic mechanisms.

See p. 2236

NB: "Unmasking a subarachnoid hemorrhage," see p. 2274.
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